

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in the European Union (EP) on February 23rd and August 18th 2004; however, copies of the relevant priority documents, EPO 2004/050185 and 04103948.8, are not available. The Examiner requests applicants submit copies of these relevant documents.

Specification

2. The disclosure is objected to because of the following informalities:

- On page 21, line 21 the word “analogdus” should be “analogous”
- The sections on page 22, line 27 to page 23, line 6, and page 23, lines 11-17 are virtually identical. Is there a reason this section is duplicated?

Appropriate correction is required.

Claim Objections

3. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitations of applicants' claim 1 limit the metal M₁ to a trivalent metal of groups 3 to 15 in the periodic

table; however, applicants' claim 2 seeks to broaden claim 1 by stating that M₁ is now a "trebly positively charged cation."

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. In their preliminary amendment applicants deleted the line "Q₁, Q₂, and Q₃ are each independently of the other C(R₁₇), N, or P" from their claim 1. These elements are necessary for defining the variables seen in the structure of Formula (I); however, for the purpose of examination the Examiner will assume that those limitations are present in applicants' claim 1, as they are present in other dependant claims.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

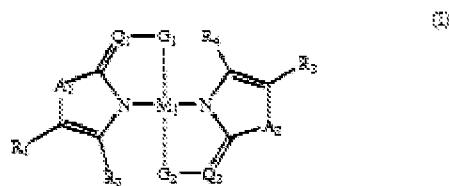
8. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being obvious over Lehmann et al. (WO 2004/079732), in view of Advanced Inorganic Chemistry (Cotton and Wilkinson, ©1966, pg. 863-876).

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference and its publication date, it constitutes prior art under 35 U.S.C. 102(e) and (a). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of

invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Lehmann et al. disclose a bis-chelated coordination compound of Formula (I), which comprises the identical ligands used in the present application. The central metal atoms are disclosed at [0010] and [0038], among which cobalt is disclosed. The overall structure of the recording medium is disclosed at [0073], wherein a transparent substrate, a recording layer, a reflector layer, and a covering layer are mentioned.



With regard to applicants' claims 1-5, using the information from [0008] to [0028] it would be trivial to form any of the specific ligands mentioned; however, please also see Lehmann et al.'s claim 3 for some of the identical ligands of applicants' claim 3.

With regard to applicants' claim 6, please see [0068] and [0076].

With regard to applicants' claim 7, the inverse layer structure is disclosed at [0088].

With regard to applicants' claim 8, please see [0107] and [0108].

With regard to applicants' claims 9 and 12, the method of recording and playing back information is disclosed at [0071] and [0072].

With regard to applicants' claim 15, the metallocene radicals are disclosed at [0037].

Lehmann et al. fail to disclose a complex comprising a trivalent metal center such as Co(III), and additionally they fail to disclose a complex comprising a tris-bidentate ligand system.

The Examiner notes, as evidenced by Lehmann et al. (WO 02/082438), that the recording performed using the compounds in the present application is localized on the ligands. This means that there is no indication of charge-transfer absorption bands, wherein the absorption occurs in the donor *d*-orbitals of the metal center and the electron is promoted to the acceptor π -orbitals of the ligands. Rather the recording is done as a $\pi-\pi^*$ absorption band.

It has long been known in inorganic chemistry, as evidenced by Cotton and Wilkinson, that cobalt compounds can readily be formed in 2+ and 3+ states (C & W, pg. 864). For example, when cobalt is in the presence of a complexing agent such as ammonia the oxidation reaction of Co(II) to Co(III) is a spontaneous reaction; furthermore, the overall barrier in this specific redox reaction is 0.1 V, which means it is a trivial process to convert Co(II) to Co(III) or vice versa. Cotton and Wilkinson state on pg. 873 that the complexes of Co(III) are "exceedingly numerous;" further, they state that the "Co(III) and Cr(III) complexes are very similar in many ways." Additionally, they state that "Co(III) shows a particular affinity for nitrogen donors" such as the ligands

being used in the present application. These Co(III) compounds, as are well-known in the field of inorganic transition metal chemistry, are octahedral in nature (6-fold coordination). Lastly, as is seen in Table 29-F-1 (pg. 863) cobalt has a very limited number of oxidation states with the Co(II) tetrahedral or octahedral and Co(III) octahedral being the “most common states.”

Since Lehmann et al. and Cotton and Wilkinson are drawn to tetrahedral and octahedral coordination complexes of cobalt, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the tetrahedral bis-chelated complexes of Lehmann et al. by oxidizing the Co(II) metal center to a Co(III) metal center. There are a finite number of identified, predictable cobalt complexes known in the art. The result of changing the Co(II) to a Co(III) complex would have produced known results to one having ordinary skill in the art. In this instance, the oxidation to a Co(III) complex means a third (well-known) ligand would have coordinated to the metal center and generated the 6-coordinate octahedral complex of applicants.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/546,077. The claims comprise the same constituents for the ligands, and the metal centers are substantially same with the pending claims claiming a trivalent metal center while the metal center of the copending claims are drawn to specific transition metals. As such the invention of the pending claims encompass the invention of the copending claims.

This is a provisional obviousness-type double patenting rejection.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gerard T. Higgins, Ph.D. whose telephone number is 571-270-3467. The examiner can normally be reached on M-F 7:30am-5pm est. (1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gwendolyn Blackwell/
Primary Examiner, AU 1794

Gerard T Higgins, Ph.D.
Examiner
Art Unit 4174

/Gerard T Higgins, Ph.D./
Examiner, Art Unit 4174